

Abstract

Tragacanth Gum productive Astragalus habitats in Golpayegan pastures, placed in North West Esfahan province, in addition to being used extensively and irregularly by local, Due to high traffic overgrazing of livestock and overgrazing companion species and due to natural factors such as drought, are exposed to losing their productive potential. Therefore it is necessary to study to investigate the impact of grazing of livestock on the amount of Tragacanth Gum production in (*Astragalus gossypinus*) habitat. The purpose of this study was to determine the effect of grazing severity on production of Tragacanth Gum in *Astragalus gossypinus* habitats. This study was conducted in habitats of *Astragalus* of Golpayegan city. The research was in a completely randomized design by three levels of grazing, moderate grazing and heavy grazing treatment in three repetitions. The heavy grazing areas were Filakhos, Konjedjan and Varzaneh, moderate grazing areas were in the Kaleh Zard, Dareh Ghileh and Piseh Kooch, and low grazing areas were Saleh Peyghambar, Gezizn and Abbas Bag in *Astragalus gossypinus* habitat of Golpayegan pastures. Sampling was conducted along 50 meter transects with a distance of 100 meters from each other from Mordad to Shahrivar of 1392. The value of Tragacanth gum and the morphological characteristics of *Astragalus* bushes such as height, diameter and canopy size were measured on each transect. A total of 75 samples were harvested from each treatment. Furthermore, the rate of soil permeability was measured with a double ring on each transect. An undisturbed soil sample for measuring soil bulk density and porosity was harvested at each transect. The surface properties such as soil's amount of compaction and the amount of animal waste in each transect as well as qualitative effects of grazing on plant species were recorded. Data were analyzed by one-way ANOVA. To differentiate the averages with meaningful differences, the Duncan's test at 95% significance level was used. To study the relationship between the morphological characteristics of *Astragalus* bushes and the physical properties of Tragacanth gum habitat's soil and the amount of Tragacanth gum production the Pearson correlation coefficient was used. Grazing severity had an effect on the amount of Tragacanth gum production in *Astragalus* habitats under heavy grazing had a meaningful difference with habitats under moderate grazing ($p < 0.05$). The amount of Tragacanth gum production in *Astragalus* habitats under heavy grazing were 54/75 percent less than the amount

produced in astragalus habitat tragacanth gum under moderate grazing intensity. Also, the amount of tragacanth gum production in the heavy grazing intensity with habitat astragalus had meaningful difference with under light grazing intensities ($p < 0/05$) Tragacanth gum production in astragalus habitat under heavy grazing intensity of 60/18 percent less than the amount of tragacanth gum production in linient grazing intensity. Finally, the amount of tragacanth gum production in moderate-intensity grazing astragalus habitat under linient grazing intensity has not mwaning ful difference ($p > 0/05$). The Correlation between the amount of tragacanth gum production with diameter and the height of the astragalus Bush, was ($r = 0/33$; $p < 0/05$) and ($r = 0/21$; $p < 0/05$) respectively. In addition, the amount of tragacanth gum of each Bush had a meaning ful correlation with plant cover ($r = 0/45$; $p < 0/05$;) there was a meaning ful correlation between Soil infiltration rate and the amount of tragacanth gum ($p < 0/05$) But and there was no correlation between the bulk density of soil porosity amount of tragacanth gum ($p < 0/05$) Heavy grazing intensity has a negative effect on The amount of tragacanth gum production of *Astragalus gossypinus* in astragalus habitat. However habitat astragalus under moderate and linient grazing intensity, there is no difference in the amount of gum tragacanth. Thus, by adjusting the number of animals grazing at moderate intensity in habitat astragalus, while creating a balance between the number of animals and habitat capacity, the amount of gum tragacanth does not decrease.

Keywords: grazing, pasture Golpayegan, tragacanth gum, *Astragalus gossypinus*.



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